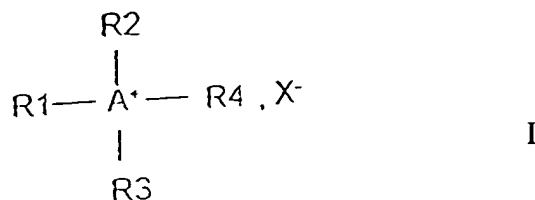


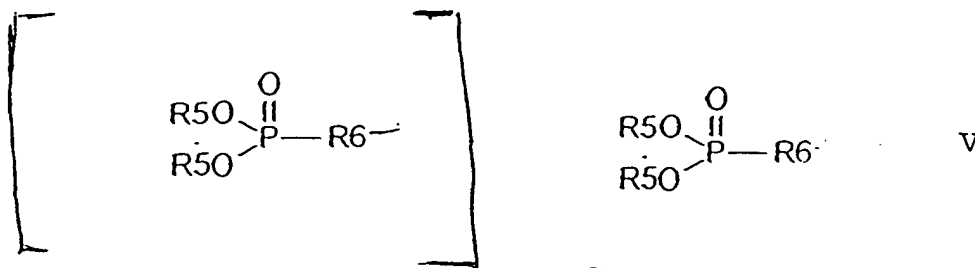
AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended)

A compound of the formula



wherein A is phosphorus; x is an anion; and wherein R1 consists of



wherein R5 is a lipid moiety and R6 is alkyl of 2 to ~~4~~3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 is selected from the group consisting of:

- alkyl of 1 to 4 carbon atoms,
- $-\text{CH}_2-\text{CH}_2\text{P}^+ (\text{R6R7R8}) (\text{R}'6\text{R7R8}), \text{R6}$ wherein R'6, R7 and R8 are alkyl of 1 to 4 carbon atoms and
- $-\text{CH}_2-\text{CO}_2\text{R9}$, and R9 is alkyl of 1 to 4 carbon atoms.

Claim 2 (previously amended)

The compound of claim 1, wherein the anion X is selected from the group consisting of halide, CF_3SO_3^- , CF_3CO_2^- and HSO_4^- .

Claim 3 (original)

The compound of claim 2, wherein the halide is selected from the group consisting of Cl^- , Br^- and I^- .

Claim 4 (previously amended)

The compound of claim 1 wherein R5 is selected from the group consisting of:

- (i) alkyl or alkenyl of 10 to 22 carbon atoms comprising 0, 1 or 2 olefinic double bonds,
- (ii) a cholesteryl derivative or
- (iii) a perfluoro alkyl of 10 to 22 carbon atoms.

Claim 5 (previously amended)

The compound of claim 1, wherein the R5 is selected from the group consisting of $\text{C}_{14:0}$, $\text{C}_{18:1}$, $\text{C}_{18:2}$, $\text{C}_{15:0}$, $\text{C}_{17:0}$ or $\text{C}_{17:2}$, wherein the first number designates the number of carbon atoms and the second number designates the number of double bonds.

Claim 6 (previously amended)

The compound of claim 1, wherein R1 is of formula V and R2 and R4 are independently a member selected from the group consisting of CH₃, C₂H₅, nC₃H₇ or isopropyl, with n being an integer from 1, 2 or 3.

Claim 7 (currently amended)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkyl and R6 is methyl.

Claim 8 (currently amended)

The compound of claim 1 wherein R1 has the formula II, III or V and R5 consists of alkenyl and R6 is methyl and R6 is methyl.

Claim 9 (previously amended)

The compound of claim 1 wherein R1 has the formula II, III, and V and R5 consists of alkyl and R6 is ethyl.

Claim 10 (previously amended)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkenyl and R6 is ethyl.

Claim 11 (previously amended)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkyl and R6 is propyl.

Claim 12 (previously amended)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of alkenyl and R6 is propyl.

Claim 13 (previously amended)

The compound of claim 1 wherein R1 has the formula II, III, or V and R5 consists of cholesteryl $-\text{[C(O)N-CH}_2\text{-CH}_2\text{-O]}$

Claim 14 (previously amended)

The compound of claim 1 wherein R1 has the formula II, III or V, R5 consists of perfluoroalkyl and R6 is ethyl.

Claim 15 (previously amended)

The compound of claim 1 wherein R1 has the formula II, III or V, R5 consists of $(\text{C}_{17}\text{H}_{33}\text{C(O)O})$ and R6 is propyl.

Claim 16 (previously amended)

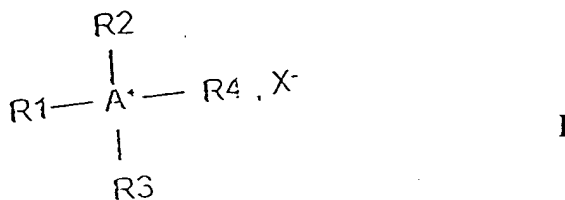
A compound according to claim 1 wherein R1 has the formula II, III or V, R5 consists of (C₁₈H₃₅) and R6 is 1,2-dideoxyglycerol.

Claim 17 (previously amended)

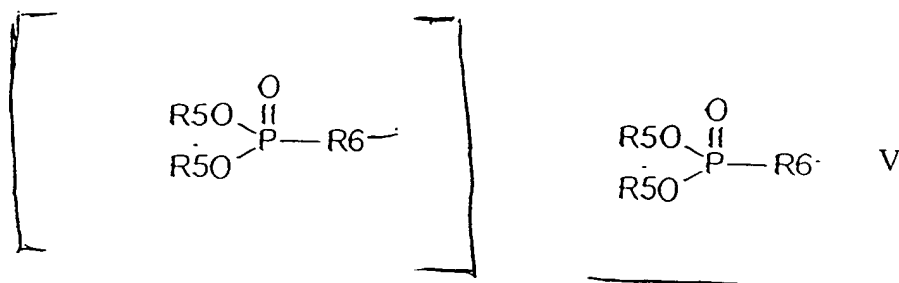
The compound of claim 1 wherein R1 has the formula II, III, or V, R5 consists of cholesteryl and R6 is [C(O))-CH₂-CH₂].

Claim 18 (currently amended)

A vesicle comprising a compound of the formula



wherein A is phosphorus; X' is an anion; and wherein R1 is



wherein R5 is a lipid moiety and R6 is alkyl of 2 to 4 3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R4 is selected from the group consisting of:

$\text{CH}_2\text{-CH}_2\text{P}^+(\text{R}_6\text{R}_7\text{R}_8)(\text{R}'_6\text{R}_7\text{R}_8)$, ~~R6~~ wherein R'6, R7 and R8 are alkyl of 1 to 4 carbon atoms and
 $\text{-CH}_2\text{-CO}_2\text{R}_9$, and R9 is alkyl of 1 to 4 carbon atoms.

Claim 19 (previously amended)

A vesicle consisting essentially of a compound of claim 1.

Claim 20 (original)

The vesicle of claim 18, which is a small unilamellar vesicle.

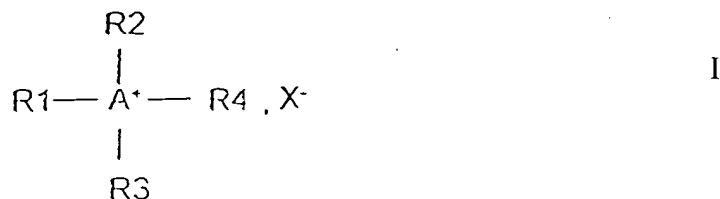
Claim 21 (original)

The vesicle of claim 18, which is a multimellar vesicle.

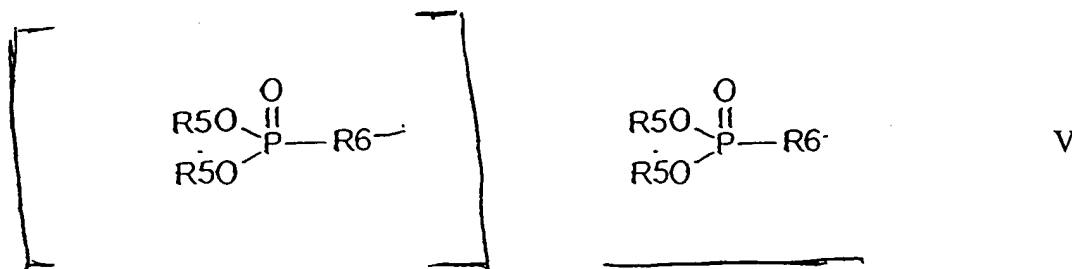
Claim 22 (currently amended)

A method for introducing in vitro a nucleic acid in a cell host comprising the steps of:

a) incubating said nucleic acid with a compound of the formula



wherein A is a phosphorus; X' is an anion; and wherein R1 is



wherein R5 is a lipid moiety and R6 is alkyl of 2 to ~~4~~3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 is selected from the group consisting of:

$\text{CH}_2\text{CH}_2\text{P}^+ (\text{R6R7R8}) (\text{R}'6\text{R7R8})$, R6 wherein R'6, R7 and R8 are alkyl of 1 to 4 carbon atoms and

$-\text{CH}_2-\text{CO}_2\text{R9}$, and R9 is alkyl of 1 to 4 carbon atoms to obtain complexes formed between said nucleic acid and said compound, and

b) incubating the cell host with the complexes obtained at step a) whereby the nucleic acid is introduced into the cell host.

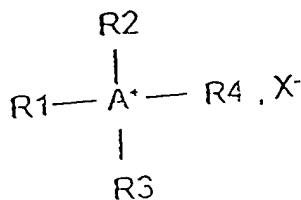
Claim 23 (previously amended)

The method of claim 22 wherein the compound is in the form of unilamellar vesicles.

Claim 24 (currently amended)

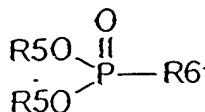
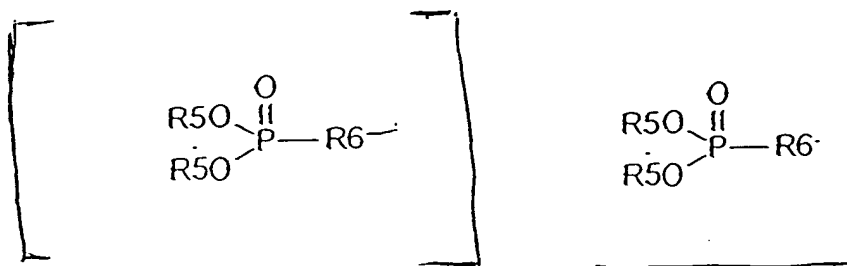
A method for introducing in vivo a nucleic acid into cells of a host organism comprising the steps of:

a) incubating said nucleic acid with a compound of the formula



I

wherein A is phosphorus; X⁻ is an anion; and wherein R1 is



V

wherein R5 is a lipid moiety and R6 is alkyl of 2 to ~~4~~ 3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 is selected from the group consisting of:

$\text{CH}_2\text{-CH}_2\text{P}^+ (\text{R6R7R8}) (\text{R}'6\text{R7R8}), \text{R6}$ wherein R'⁶, R7 and R8 are alkyl of 1 to 4 carbon atoms and

$-\text{CH}_2\text{-CO}_2\text{R9}$, and R9 is alkyl of 1 to 4 carbon atoms to obtain complexes formed between said nucleic acid and said compound; and

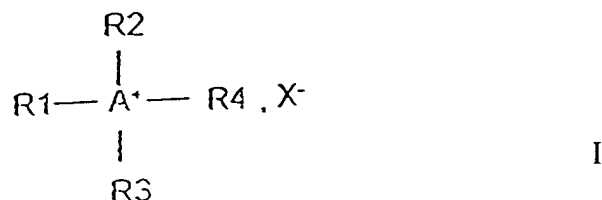
- b) administering the complexes obtained at step a) to said host organism
whereby said nucleic acid is introduced into the cell of the host organism.

Claim 25 (original)

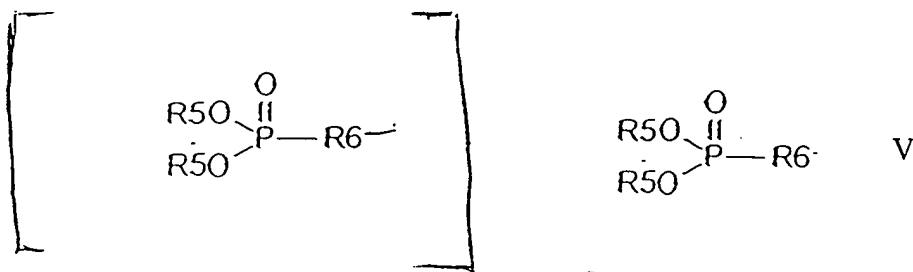
The method of claim 24, wherein the organism is a mammal.

Claim 26 (currently amended)

A complex formed between a nucleic acid and a compound of the formula



wherein A is phosphorus; X' is an anion; and wherein R1 is



wherein R5 is a moiety and R6 is alkyl of 2 to ~~4~~ 3 carbon atoms,

R2 and R4 are alkyl of 1 to 4 carbon atoms; and R3 is selected from the group consisting of:

$\text{CH}_2\text{CH}_2\text{P}^+ (\text{R6R7R8}) (\text{R}'6\text{R7R8})$, R6 wherein $\text{R}'6$, R7 and R8 are alkyl of 1 to 4 carbon atoms and

-CH₂-CO₂R₉, and R₉ is alkyl of 1 to 4 carbon atoms to obtain complexes formed between said nucleic acid and said compound; and

b) administering the complexes obtained at step a) to said host organism whereby said nucleic acid is introduced into the cell of the host organism.

Claim 27 (original)

The complex of claim 26, wherein the nucleic acid comprises a polynucleotide which encodes an antisense polynucleotide.

Claim 28 (original)

The complex of claim 26, wherein the nucleic acid comprises a polynucleotide which encodes an antisense polynucleotide.

Claim 29 (original)

The complex of claim 26, wherein the polynucleotide encoding a polypeptide is operably linked to a regulatory sequence.

Claim 30 (previously amended)

A composition comprising a complex of claim 26.

Claim 31 (previously amended)

A pharmaceutical composition comprising a complex of claim 26.